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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,060	12/05/2003	Don A. Kubose	06299.18992	9163

25005 7590 01/26/2007  
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SUITE 401  
MADISON, WI 53717-1914

EXAMINER
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MATZEK, MATTHEW D

ART UNIT	PAPER NUMBER
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1771

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/729,060	<b>Applicant(s)</b> KUBOSE ET AL.	
	<b>Examiner</b> Matthew D. Matzek	<b>Art Unit</b> 1771	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 33,35, 37-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33,35,37-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/13/2006 has been entered.

***Response to Amendment***

2. Claim 34 has been canceled. Claims 33, 35 and 37-65 are currently active. Amended claims 33, 41, 47, 53, 59 and 65 contain no new matter. The previously applied 112 2<sup>nd</sup> paragraph rejections have been withdrawn due to amendment. The anticipation rejection made in view of Dahringer et al. has been withdrawn because Dahringer et al. are silent as to the creation of a multi-layered, graded density filter structure.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 33, 35, 37 and 39-43, 45-49, 51-55, 57-61 and 63-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahringer et al. (US 5,726,107) in view of Kahlbaugh et al. (US 5,364,456).

a. Dahringer et al. teach a nonwoven of electret fiber mixtures that comprise at least two different types of fibers and charge control agents (Abstract). The nonwoven may be

formed via needle-punching (col. 5, lines 60-65). The fibers of the nonwoven may be polypropylene (col. 12, lines 16-21). The nonwoven mainly comprises fibers with 0.01 to 30% by weight of the invention being charge control agents (Abstract). This teaching provides for the applied article to comprise 70 to 99.99 weight percent polypropylene fibers. A number of charge control agents (charge treatment agents) may be applied to the fibers of the nonwoven fabrics including cationic amides (col. 12, lines 50-59). The fibers may be made in a sheath-core orientation with the sheath comprising the electret material (col. 5, lines 43-48). This provides for Applicant's charge treatment saturation as the surface of every fiber in the article possesses the charge treatment.

a. Claim 39 is rejected as nonwoven fabrics may be mechanically consolidated (col. 6, lines 60-65) via heated calendaring (col. 8, lines 25-29) and so the fabric density, air permeability, and mean pore size can be controlled through heated calendaring and densification of the nonwoven sheets. Claim 40 is rejected as the applied invention meets the structural and compositional limitations set forth in claim 33 and as such can be formed into the instantly claimed orientations. The linear density of the fibers of the applied nonwoven range from 0.018 to 27 denier (col. 4, lines 30-38). When converted to diameter based upon a density of 1.7g/cc (polyester) the fibers have a diameter ranging from 0.9 to 47.4 micrometers. Examiner interprets this teaching to anticipate a blend of micro-denier/fine-denier fibers and coarse-denier fibers. Dahringer et al. is silent as to the creation of a multi-layered, graded density filter structure.

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- b. Kahlbaugh et al. teach filtration article that comprises a gradient depth filter system with multiple layers (col. 5, lines 42-46) that decrease in fiber size with depth (col. 5, lines 7-10).
  - c. Since Dahringer et al. and Kahlbaugh et al. are from the same field of endeavor, (i.e. filters), the purpose disclosed by Kahlbaugh et al. would have been recognized in the pertinent art of Dahringer et al.
  - d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have made the article of Dahringer et al. into a multi-layer density graded filter. The skilled artisan would have been motivated by the desire to create a filter with an extended lifetime or relative long lifetime (col. 6, lines 44-49).
4. Claims 38 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahringer et al. (US 5,726,107) in view of Kahlbaugh et al. (US 5,364,456) as applied to claims 37 and 43 above, and further in view of Bond et al. (US 2002/0168912).
- a. Dahringer et al. teach a nonwoven of electret fiber mixtures that comprise at least two different types of fibers and charge control agents (Abstract). The nonwoven may be formed via needle-punching (col. 5, lines 60-65). The nonwoven article may also be needle-punched to other layer (col. 8, lines 37-42) providing it with greater stability or additional filtering capability. The fibers of the nonwoven may be polypropylene (col. 12, lines 16-21). The nonwoven mainly comprises fibers with 0.01 to 30% by weight of the invention being charge control agents (Abstract). This teaching provides for the applied article to comprise 70 to 99.99 weight percent polypropylene fibers. A number of charge control agents (charge treatment agents) may be applied to the fibers of the

nonwoven fabrics including cationic amides (col. 12, lines 50-59). The linear density of the fibers of the applied nonwoven range from 0.018 to 27 denier (col. 4, lines 30-38). Examiner interprets this teaching to anticipate a blend of micro-denier/fine-denier fibers and coarse-denier fibers. The invention of Dahringer et al. is silent as to the use of polyamide-epichlorohydrin (PAE).

b. Bond et al. teach needle-punched [0136] nonwoven webs comprising polypropylene fibers [0137] that may be used as filters [0138]. The fibers may comprise multiple components and may include wet strength resins such as polyamide-epichlorohydrin (PAE) [0062].

c. Since Dahringer et al. and Bond et al. are from the same field of endeavor, (i.e. filters), the purpose disclosed by Bond et al. would have been recognized in the pertinent art of Dahringer et al.

d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have made the article of Dahringer et al. with the wet strength resin of Bond et al. with the motivation to improve the crosslinking ability of the polypropylene fibers of the filter [0062]. The invention of Bond et al. provides for a different motivation than Applicant for the inclusion of PAE into the nonwoven filter fabric, but the teaching still reads on the instantly claimed article as it would also serve as charge treatment to the polypropylene fibers.

5. Claims 50, 56 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahringer et al. (US 5,726,107) in view of Kahlbaugh et al. (US 5,364,456) as applied to claims

49, 55 and 61 above, and further in view of Bond et al. (US 2002/0168912). The inventions of Dahringer et al. and Kahlbaugh are silent as to the use of polyamide-epichlorohydrin (PAE).

a. Bond et al. teach needle-punched [0136] nonwoven webs comprising polypropylene fibers [0137] that may be used as filters [0138]. The fibers may comprise multiple components and may include wet strength resins such as polyamide-epichlorohydrin (PAE) [0062].

b. Since Dahringer et al. and Bond et al. are from the same field of endeavor, (i.e. filters), the purpose disclosed by Bond et al. would have been recognized in the pertinent art of Dahringer et al.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have made the article of Dahringer et al. with the wet strength resin of Bond et al. with the motivation to improve the crosslinking ability of the polypropylene fibers of the filter [0062]. The invention of Bond et al. provides for a different motivation than Applicant for the inclusion of PAE into the nonwoven filter fabric, but the teaching still reads on the instantly claimed article as it would also serve as charge treatment to the polypropylene fibers.

### ***Response to Arguments***

6. Applicant's arguments filed 10/13/2006 have been fully considered but they are not persuasive.

7. Applicant argues that by amending claims 41, 47, 53, 59 and 65 to include diameter limitations, the saturation of the charge treatment, and needle punching of multiple layers. As set forth *supra*, the applied art does in fact provide for the instant limitations.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is (571) 272-2423. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mdm MDM

  
Norca L. Torres-Velazquez  
Primary Examiner  
Art Unit 1771

1/22/07